

Recreational Use of Waterbodies on or Near Joint Base Cape Cod (JBCC) (Formerly the Massachusetts Military Reservation)

Community Fact Sheet 2018

This community fact sheet discusses environmental health concerns related to recreational use of selected Upper Cape Cod waterbodies and the results of recent chemical testing. **Based on the available data, water bodies tested near JBCC are safe for swimming, wading, boating, and catch-and-release fishing.**

The Massachusetts Department of Public Health (MDPH) has issued fish consumption advisories due to raised mercury levels in many waterbodies across Massachusetts, including several ponds near JBCC.

This fact sheet does not describe the sampling of microbes such as cyanobacteria (algae) and fecal indicator bacteria that is performed at many of the waterbodies during the summer months. For specific information about microbial water quality measurements, contact your local health department or visit:

www.mass.gov/dph/beaches

Can I safely swim, wade, or boat in the surface water bodies at or near JBCC?

Yes, all of the surface water bodies (including lakes, ponds, and rivers) shown in Table 1 are safe for swimming, wading and boating. Table 1 summarizes safe recreation use for 33 surface water bodies on or near JBCC where environmental sampling data are available.

Low levels of chemicals associated with JBCC were sometimes detected in the ponds or rivers. None of the chemical detections appear to be a health concern for recreational activities.

Can I safely fish in waters at or near JBCC?

Catch-and-release fishing is safe for all water bodies near JBCC. Catch and release fishing means fish are caught for fun and are released back into the water body unharmed.



However, mercury has been detected in fish throughout the Commonwealth at levels that may be unsafe to eat, including water bodies near JBCC.

Five ponds (Johns, Ashumet, Snake, Mashpee-Wakeby, and Peters) each have a public health fish consumption advisory based on mercury levels found in fish samples from these ponds. Table 1 has more information about the fish advisories for ponds near JBCC.

What is the MDPH statewide fish consumption advisory for mercury?

The MDPH issued a statewide advisory recommending that until more information is available on mercury levels in fish in a specific local waterbody, certain people should not eat fish caught from that waterbody.

Women who are pregnant, women of childbearing age who may become pregnant, nursing mothers, and children under 12 years old should not eat fish that were caught from a local waterbody that hasn't been evaluated by MDPH. Please be aware that this advisory does not apply to fish stocked in freshwater lakes and ponds. MDPH has issued other important recommendations for eating locally caught fish.

For more information on mercury and fish consumption advisories, call the MDPH Environmental Toxicology program at 617-624-5757 or visit www.mass.gov/dph/fishadvisories

Where does mercury come from? How can the ponds be safe to swim in but contain fish that are not safe to eat?

Mercury enters the environment naturally when rocks are worn down, as well as through industrial burning and power generation. The mercury travels through the air and settles onto waterbodies. Fish ingest the mercury that's in the water and sediment, which then builds up inside them over time.

While there is a warning about eating fish, there are no known health concerns related to activities such as swimming, boating, or catch-and-release fishing in these ponds. This is because the health advisories are based on chemical levels in the fish. Some chemicals, including mercury, accumulate in fish's fat and muscle at levels that are much greater than the surrounding waters. Only by eating the fish will someone be exposed to these chemicals. Recreational activities like swimming, boating, and touching fish are not likely to expose individuals to high levels of mercury or other chemicals.

In the past, ethylene dibromide (EDB) was detected in the groundwater below Snake Pond and in the Coonamessett River surface water. Snake Pond surface water has also been tested for explosives and perchlorate. Are there possible health impacts from recreational use of either Snake Pond or the Coonamessett River?

Adverse health effects are not expected from recreational use of either Snake Pond or the Coonamessett River. EDB was found in the groundwater below Snake Pond in 2001 and in surface water of the Coonamessett River in 1996. The surface waters of Snake Pond, the public beach and private beach area and multiple locations on the Coonamessett River are regularly tested for EDB. EDB has not been detected in either waterbody since 2011. Additionally, in snake pond, Royal Demolition Explosives (RDX) have not been detected and perchlorate has not been detected above the Massachusetts Drinking Water Standard since 2010.



Should I be concerned about trichloroethylene (TCE) and tetrachloroethylene (PCE) from groundwater plumes associated with JBCC?

Physical contact with water from the ponds, river, and bogs near the groundwater plumes is not likely to present a health hazard. The surface waters of Ashumet Pond, Johns Pond, Deep Pond, Backus River, Red Brook Harbor, and Squeteague Harbor have been regularly checked for these chemicals since the early 2000s. TCE and/or PCE have not been detected above the drinking water standard since 2009. Using any of these waterbodies for recreation is not expected to have any effects on your health.

Should I be concerned about emerging contaminants like Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) or 1,4-dioxane that have been detected in these waterbodies?

These emerging contaminants have not been detected in area waterbodies at levels that present a health risk to people using them for recreation.

PFOA and PFOS are part of a larger group of chemicals referred to as per- and polyfluoroalkyl substances (PFAS). They have been used to make carpets, clothing, fabrics for furniture, paper packaging for food, and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used in firefighting foam and in a number of industrial processes. Because these chemicals have been used in a range of consumer products, most people have been exposed to them.

In May 2016 the United States Environmental Protection Agency (EPA) issued health-based guidance (known as a drinking water health advisory) determining a level that is safe and protective against adverse health effects for individuals drinking water over an entire lifetime.

PFOS and PFOA detected in the surface water of the Backus River in 2016 are below the drinking water health advisory. Johns and Ashumet Ponds were sampled in 2016 and both had levels of PFOS that were greater than the drinking water health advisory. The Backus River, Johns Pond, and Ashumet Pond are waterbodies that are used primarily for recreation or for cranberry bog irrigation. Occasional exposure to PFOA and PFOS from swimming, boating, or fishing in these waterbodies is not expected to result in adverse health effects. This is because these recreational activities would not result in significant exposure (e.g. regular ingestion of water) over a long period of time.

1,4-Dioxane is an industrial chemical in solvents, paints and waxes which was detected at low levels in the Backus River, Pond 14, Coonamessett River, Deep Pond and Johns Pond. All of these detections are below the Massachusetts Department of Environmental Protection (MassDEP) drinking water regulation. Adverse health effects from recreational activity in these waterbodies are not expected.

For more information, visit the Environmental Protection Agency's website
PFOA and PFOS:

[epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfes_updated_5.31.16.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfes_updated_5.31.16.pdf)

1, 4-Dioxane:

[epa.gov/sites/production/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf](https://www.epa.gov/sites/production/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf)

Table 1: Recreational waterbodies on or near JBCC evaluated as safe for swimming, wading, or boating. See notes below for consuming fish from these waterbodies.

COMMUNITY	WATERBODY
Barnstable	Shubael Pond
Bourne	Cuff Pond Long Pond Flax Pond Red Brook Pond Red Brook Harbor Squeteague Harbor Wilson Bog Pond
Falmouth	Backus River (Bogs) Coonamessett Pond Coonamessett River (Bogs) Crooked Pond Deep Pond/Lily Pond Flax Pond Fresh Pond Grews Pond Jenkins Pond Mares Pond Round Pond Pond 14 Collins Bog Bournes Pond River (Bogs)
Mashpee	Mashpee-Wakeby Pond ¹ Ashumet Pond ² Johns Pond ³ Moody Pond Quashnet River (Bogs) Santuit Pond
Sandwich	Pimlico Pond Triangle Pond Peters Pond ¹ Weeks Pond Snake Pond ³

MDPH FISH ADVISORY

(Fish consumption recommendations are based on available data or statewide advisory for mercury concentrations in fish tissues)

(Fish consumption recommendations are based on available data or statewide advisory for mercury concentrations in fish tissues)	Amount	Species
1. Mashpee-Wakeby Pond and Peters Pond		
Children younger than 12 years, pregnant women, nursing mothers, and women who may become pregnant	Do not eat	Smallmouth bass
General public	Two meals per month	
2. Ashumet Pond		
Children younger than 12 years, pregnant women, nursing mothers, and women who may become pregnant	Do not eat	Largemouth bass
General public	Two meals per month	
3. Johns and Snake Ponds		
Children younger than 12 years, pregnant women, nursing mothers, and women who may become pregnant	Do not eat	Any fish
General public	Do not eat	Smallmouth bass
	Two meals per month	All other fish
4. All Other Ponds (no pond-specific data have been collected)		
Children younger than 12 years, pregnant women, nursing mothers, and women who may become pregnant should not eat any fish		

WHERE CAN I GET MORE INFORMATION?

ENVIRONMENTAL TOXICOLOGY PROGRAM

BUREAU OF ENVIRONMENTAL HEALTH

Massachusetts Department of Public Health

250 Washington Street, 7th Floor, Boston, MA 02108

Phone: 617-624-5757 | Fax: 617-624-5777 | TTY: 617-624-5286

http://www.mass.gov/dph/environmental_health

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SOURCES OF ADDITIONAL INFORMATION

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Impact Area Groundwater Study Program

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Agency for Toxic Substances and Disease Registry

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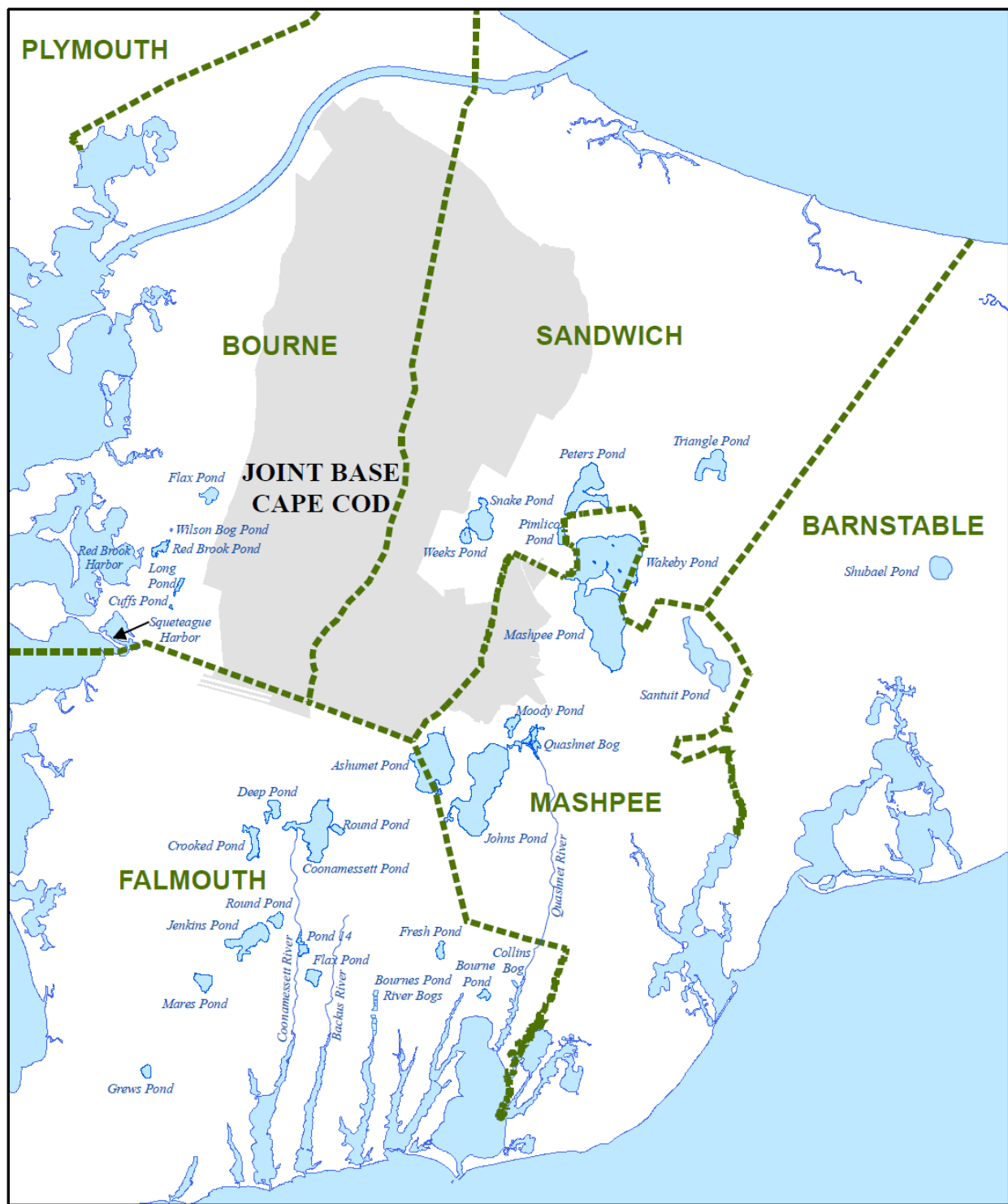
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Barnstable County Dept. of Health and the Environment

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Figure 1
Recreational Water Bodies on or Near Joint Base Cape Cod with Available Chemical Data



Legend

- Joint Base Cape Cod
- Lakes, Ponds, and Bogs
- Town Boundary

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